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# RECENT DEVELOPMENTS IN THE THEORY OF FOREIGN EXCHANGE: SOME IMPLICATIONS FOR EXCHANGE RATE POLICY

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As the title suggests, the purpose of this paper is to present a broad survey of recent theoretical developments relating to exchange rate management and exchange rate systems, and to suggest some possible implications for the formation of exchange rate policy. If I were to offer a sub-title to indicate any underlying theme, an appropriate one might be:

"Three Traditions in International Finance: An Outsider's View"

As an outsider to both the academic literature and any actual policy-making body, I have, in the process of collecting my thoughts for this presentation, become aware of three traditions that seem to have become well established. If you will excuse any apparent irreverence on my part I would like to use these traditions in way of an introduction.

The first tradition that appears is that almost any analyst working in the field, when posed a specific problem, will fail to give anything like a specific or direct answer. Thus when one wishes to support, say, fixed exchanges, one generally argues by way of attacking all alternative systems.

I was asked by our host to prepare a talk dealing with the issue of exchange rate policy, emphasizing the practical policy aspects of such questions as: Under what circumstances should a country devalue? What are the short-run implications of devaluation for basic aggregate economic magnitudes? What are the long-run consequences of a devaluation? And when should a country maintain a fixed exchange rate and when should she let the value of her currency be determined by the free market process?

In keeping with this first tradition of international finance I do not propose to address these questions directly, but rather to offer

some comments relating to the monetary theoretic aspects of exchange rates, and then, in my concluding remarks, come back to some practical aspects of exchange rate analysis. While the current fashion is to carefully draw a distinction between the controversy surrounding arguments relating to the choice between fixed or flexible exchange rate systems on the one hand, and the analysis of exchange rate changes within the present pegged rate system on the other, with your permission, I will treat both questions intermittently in what follows.

The second tradition of international finance that commands attention is that policy-makers don't heed the advice of academic economists very well; or, at least, they respond only with a long lag to changes in pervasive intellectual opinion. This is not necessarily a criticism of policy makers - there is a strong argument for subjecting policy prescriptions to rigorous professional examination prior to implementation.

In the post-Bretton Woods period, academic economists began an almost universal move towards general agreement in favour of increased flexibility in exchange rates. I believe it to be not too crude a generalization to suggest that the foundations of support for this view - as expounded, for example, in the now classic early 1950's paper by Milton Friedman - rest essentially on two (related) propositions. First, it is contended that a system of flexible exchange rates is the only system under which complete autonomy is guaranteed for domestic authorities to pursue whatever monetary, fiscal or other policies they desire in order to promote the "national interest." Thus by the elimination of the balance-of-payments constraint on policy choices, it is contended that domestic authorities are more able, under a regime of flexible exchange rates, to

act so as to maximize the welfare, as they perceive it, of their constituents.

The second fundamental argument used to support or promote flexible exchange rates is that such a system, conditional upon the evolution of efficient forward markets, is the only one under which international commerce will be free to function without any interference. That is, flexible exchange rates are seen to preserve an environment for free trade. The contention is, again in the absence of the balance-of-payments constraint, that policy makers will not find it necessary to impose tariffs, quotas, exchange controls, or other such "non-optimal policies."

It should be noted that there is a sense in which these two arguments are mutually inconsistent, and that the second of the above propositions derives in large part from the optimism of proponents of free market mechanisms. Although flexible exchange rates may remove one of the sources of the desire or need for government interference with international trade and financial transactions - it does not remove all such sources. In fact, such a system might be construed as giving an extra degree of freedom to policy-makers wishing to pursue certain objectives without having to worry about balance-of-payments repercussions. Of course, the government would recognize that any policy actions which would have balance of payments repercussions under fixed rates would have exchange rate repercussions under flexible. The argument is, and I would be surprised if it were contentious, that under a wide range of circumstances the exchange rate implications would not be as much a cause for concern from the government's point of view.

Thus the "free trade" argument for flexible exchange rates is essentially a static one, and consequently loses much of its appeal in a dynamic "real-world" setting involving uncertainty where events are continually occurring so as to cause government to evaluate possible forms of market interference for stabilization, equity or other purposes.

I believe these considerations to be particularly relevant to the current Canadian situation. I am thinking here in particular about the activities of D.R.E.E. and other government agencies trying to directly affect resource allocation within traded good sectors, and also about the potential desire to restrict the flow of foreign investment when such investment may be the source of foreign exchange required to maintain a trade account deficit under fixed exchange rates. Thus, to the extent that flexible exchange rates may aid government interference with the market process, they may inhibit and not promote free trade. It also should not come as a great surprise to note that to be a proponent of completely unrestricted foreign trade and commerce is not a necessary condition for being a proponent of flexible exchange rates - again such nationalistic motivations as indicated above may lead one to favour flexible exchange rates.<sup>1</sup>

Nevertheless, the arguments for increased flexibility that abound in the literature have become so pervasive that, in spite of the second long-standing tradition, the viewpoint has been creeping into more widespread

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1. I might mention the paradox suggested to this author by Arthur Laffer. That paradox is that while proponents of flexible exchange rates are generally in favour of free trade, it is perhaps ironical that the system they are propounding eliminates the need for trade in money.

acceptance among policy makers. One finds more and more international monetary authorities of various connection propounding the need for increased flexibility, and several major trading countries including Canada have essentially opted out of IMF agreements to allow their own currencies to fluctuate at least partially in response to market pressures.

The third tradition that I refer to in the subtitle is that regardless of how policy makers do decide to behave - even if they acquiesce to current intellectual opinion - academic economists will commence to tell them to behave differently.<sup>1</sup> Again, I do not offer this necessarily as a criticism of the academic community - after all if a previously given prescription is now going to be used as a basis for policy formation, it surely warrants even closer examination than it may previously have received.

Not surprisingly, then, in keeping with this third tradition of international finance, as policy makers have become increasingly sympathetic to the concept of increased flexibility, the academic community has begun devoting an increasing amount of time to revealing the shortcomings of the flexible exchange rate model. For the purposes of this discussion this reconsideration on the part of academic economists can be grouped under three (obviously related) broad categories. They are: Arguments related to the concept of optimal currency areas, arguments propounding the beneficial effects of a world money, and arguments evolving out of the recent intellectual flurry surrounding the monetary approach to the balance of payments.

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1. There is obviously a possible "identification problem" associated with the second and third traditions.



The concept of optimal currency areas first introduced into the literature by Robert Mundell and elaborated on by Ronald McKinnon a decade ago, was received as something of an intellectual curiosum bearing the simple but not unimportant message that "since the political-geographic boundaries of countries do not correspond to those depicting optimal currency areas, flexible exchange rates cannot be counted on to solve all international adjustment problems."

Mundell defines Optimal Currency Areas along regional lines while McKinnon emphasizes the importance of 'openness', i.e., the fraction of economic activity involved in tradable goods. While we shall return to look at these issues more closely, it is obvious from both the multi-regional structure and the openness of the Canadian economy that the above message is an important comment on the case for a flexible Canadian exchange rate. Of course, it does not follow that a fixed exchange rate would necessarily be superior for Canada - it implies only that the case for a flexible rate is not as strong as it otherwise would be.

The regional nature of the Canadian economy<sup>1</sup> presents an interesting illustration of the above arguments in the light of the "Energy Crisis" many observers forecast for the next decade. Presuming that Canada's resource exports will rise to some degree in the face of this shift in demand, it is interesting to compare the implications of fixed and flexible exchange rate systems. Under fixed rates the expansionary

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1. Mundell's regions are defined by, among other things, specialization in production of a homogeneous export good. We retain his basic model where Western Canada produces Natural Resource goods and Eastern Canada produces manufactured goods.

aggregation of goods. This, of course, is directly related to McKinnon's argument that the more open an economy is, the more gains there are to fixing its exchange rate, and hence fixing domestic prices in terms of world prices.

The broader issue relating to this argument is the one concerning the transmission of business cycles as between countries under various exchange rate systems. The generally accepted view is that flexible exchange rates do provide some shock absorber role so that if one believes that the domestic economy by itself is more stable than those of its foreign partners then this provides an additional argument for flexible rates. If, however, one believes that the domestic economy is less stable, then fixed exchange rates may be a method of dampening the effects of the instability by spreading some effects to its foreign partners. Thus the McKinnon argument must be qualified by recognizing the difference between "exogenously given" prices and "stable" prices. An open economy may not want to tie its price level to international prices if the international prices are less stable (i.e., if the demand for exports is uncertain and highly variable) than what the domestic authorities believe they might be able to achieve under flexible exchange rates.<sup>1</sup>

Finally, we note that these considerations may be particularly relevant in a world in which individual countries are experiencing various

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1. It might then be argued that the poor price performance of the United States economy has been a major factor in the breakdown of the fixed exchange rate system of the 1960's.

impact of the boom in exports would, via the usual monetary adjustment mechanism, be generalized throughout the entire economy. Under flexible exchange rates the boom would cause the Canadian dollar to appreciate. Since domestic wages and prices are "sticky downwards" this exchange rate appreciation would be deflationary for the manufacturing sector and hence an unemployment problem in Ontario would likely ensue.<sup>1</sup> Thus if one believes this export boom for Western Canada to be of significant magnitude one would be led to favour the re-establishment of a fixed exchange rate for Canada.<sup>2</sup>

In addition to the above rather obvious implications, the Optimum Currency Area concept, primarily under Mundell's careful tutelage, has proven to be quite robust and seems to have played a useful role in clarifying some of the issues pertaining to current discussion surrounding the possible formation of currency unions in Europe and North Africa. Hence the arguments in favour of such currency unions not only include the social saving from the pooling of reserves, and the potential of a common currency strong enough to compete with the U.S. dollar for seniorage; but proceeds to recognize that small specialized economies - Harry Johnson's mythical banana republic - may not gain unambiguously by fixing the value of their national currency in terms of home goods - this being the implication of adopting a floating exchange rate. Rather, such a country may be better off fixing the value of its currency in terms of some broader

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1. Of course, those workers remaining employed would benefit from lower import prices.

2. Of course, if a "downward shift" in export demand were contemplated similar reasoning would lead one to favour a flexible rate. The general case of uncertain export demand is addressed below.

rates of inflation and inflationary expectations. Thus, for example, in the early 1950's Canada was able to ameliorate the inflationary pressures arising from U.S. involvement in Korea by allowing the Canadian exchange rate to revalue; and could have done so again in the mid-1960's but instead chose, at least until May of 1970, to "import" inflation from the United States.

The essential lesson to be learned from the currency area approach is that the question of flexible exchange rates is generally not an interesting one on a country by country basis, but rather only is interesting as between such larger entities as a European currency area and the United States. We note the obvious problem that such an institutional arrangement would create for Canada. Should she join one or other of the currency areas, or should she try to "make it on her own." Of course, as soon as the exchange rate between the other currency areas changes, Canada could only maintain a fixed exchange rate with one or the other, and presumably the question as to which she should do is one to which the currency area concept addresses itself.

The second development regenerating interest in fixed exchange rate systems is tied closely to the recent activity of monetary theorists to delineate precisely the role of money in an exchange system, and to attempt to identify the benefits from the "social contrivance of money". Writers in international finance have attempted to extend this line of thinking to trade between countries, and arguments in favour of a world money are plentiful. The arguments presented include the contentions that a unified international monetary system of fixed exchange rates efficiently provides such monetary services as a store of value, unit of

account and general minimization of transactions costs. I believe this last item to be the one of major importance; the first two likely being equally well provided for in the "defacto" dollar standard that is generally conceded to be the logical evolution of a system of flexible exchange rates. The major arguments pertaining to the transactions costs of a flexible exchange rate are the increased information costs emphasized by Mundell in his address to the Bretton Woods Conference in the summer of 1969, and those of the costs involved in the system of forward rates as emphasized by C.P. Kindleberger in his paper given at the Federal Reserve Bank of Boston annual conference in 1970.

The final point with respect to the world money argument arises immediately from the current hot topic in monetary theory - the "optimum quantity of money." In conjunction with the obvious close association between the "adjustment problem" and the "liquidity problem", the issue arises as to whether the post-war experience represents a fair test of the effectiveness of the provisions for adjustment in the Bretton-Woods agreements, or whether the model has been unduly hindered in its operation by an insufficient world money supply. Introduction of the "liquidity problem" and the concepts of "optimal reserves" and "optimal world money supply" then makes clear the obvious intertemporal aspects of international financial adjustments: an aspect that has been given insufficient attention due to the now anachronistic prevalence of mercantilist attitudes. Only very recently has the standard apparatus of modern welfare economics been brought to bear on problems of international disequilibrium.

The third body of literature we wish to appeal to is that

dealing with the monetary approach to the balance of payments, and the implications thereof for the role of exchange rate changes. For the purposes of the present discussion, this monetary approach can be viewed as an extension of the basic, well-known proposition that an open economy cannot control her nominal money stock. That stock is demand determined and any domestic credit policy intending to influence the money supply will simply give rise to offsetting foreign reserve flows. Hence the balance of payments represents the difference between desired additions to the money stock and domestic credit creation.

A necessary by-product of this approach is the immediate recognition of the exchange rate as a monetary variable, being the price of the foreign currency in terms of the domestic currency. Thus the distinction between this variable and the terms of trade, the latter being a real variable expressing the average price of export goods in terms of import goods, is immediate.<sup>1</sup> Ignoring capital flows, it is the terms of trade which must adjust to correct a trade imbalance at current expenditure levels. Devaluation, in this model, acts as a tax on holders of domestic currency assets and as a transfer to holders of foreign currency; these in turn effecting the income-expenditure patterns so as to bring about the required improvements in the trade account.

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1. While the distinction is obvious once it has been made, it is my view that in discussions of devaluation a good deal of confusion has arisen precisely from a failure to recognize the distinction. The extreme case, of course, arises in relation to a "small country" where the terms of trade are treated as fixed and devaluation can only operate by effecting a change in domestic absorption. At the other extreme is Mundell's example of two North American Optimum Currency Areas - a case where the exchange rate and the terms of trade are synonymous since each authority operates to stabilize the price of its good in terms of its own currency.

Two points appear noteworthy. First the trade surplus so generated is inherently temporary, disappearing when domestic asset stocks have been replenished. Secondly, in the long run the exchange rate is neutral in the sense that nothing can be accomplished via exchange rate changes that wouldn't otherwise be accomplished via other domestic policies. Of course the very essence of this theory of the exchange rate is that changes are not neutral in the short-run; exchange rate changes give rise to asset disequilibrium which in turn elicit changes in the flow of goods and services.

These considerations would seem to have implications for both the fixed vs flexible controversy and for the use of devaluation as a macro policy tool. As far as the first is concerned, it follows from the fact that if exchange rate changes cause trade patterns to change in the short-run, then in a world of imperfect information they may also give rise to non-optimal real resource flows as investors move into apparently favoured industries.<sup>1</sup>

The implications of the monetary approach for the original question posed to me - Under what circumstances should a country devalue? - can now be addressed. It is commonplace for the answer to the above question to be stated in terms of the existence of a "fundamental disequilibrium" in the exchange rate. The monetary approach makes clear that, for any value of the exchange rate, there exists a constellation of domestic prices, wages and government debt corresponding to which there would be external

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1. These resource costs could possibly be minimized by government intervention in forward markets, but it is not clear that such intervention is within the rules of the game of a flexible exchange rate system.

and internal equilibrium. The existence of perpetual imbalance in the foreign sector is not prima facie evidence of a "fundamentally wrong" value of the exchange rate any more than it is of "fundamentally wrong" values of any of the other above mentioned variables. Hence the argument for an exchange rate change must rest on "least adjustment cost" grounds. That is, we have a disequilibrium position whereby one or other variable must change to restore equilibrium; different control over different variables implies a different time-path for the economy and each such path has associated with it different welfare implications.<sup>1</sup> Thus, while exchange rate changes are still conceded to be an efficient method of correcting a fundamental disequilibrium, the main body of literature cited here might be construed as being an attempt to delineate more precisely what the costs of such changes are.

I confess that the foregoing offers little in the way of a concrete or specific answer to the questions posed to me - I hope however that I have been successful in outlining major recent developments, indicating possible sources of confusion which should be avoided, and outlining a framework for building specific models for policy making.<sup>2</sup>

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1. This makes clear the necessarily intertemporal nature of balance of payments adjustment. One advantage of the monetary approach is that it is explicitly dynamic - see Rudiger Dornbusch, "Aspects of a Monetary Theory of Currency Depreciation," unpublished Ph.D. thesis, University of Chicago, 1971.

2. To this I might add the admittedly negative conclusion which I unconsciously stole from Harry Johnson: That freely flexible exchange rates are not a panacea to the vast array of world monetary problems.